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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,865	10/17/2001	Bruce Hoff	BD1006	7964

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TOPE-MCKAY & ASSOCIATES
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EXAMINER

BAUTISTA, XIOMARA L

ART UNIT	PAPER NUMBER
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2173

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,865

Applicant(s)


HOFF ET AL.

Examiner

X L Bautista

Art Unit

2173



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606.
The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

- (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification

definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

- (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

- (f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or

widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (k) Sequence Listing, See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

2. The spacing of the lines of the specification is such as to make reading and entry of amendments difficult. New application papers with lines double spaced on good quality paper are required.

3. The claims are objected to because the lines are crowded too closely together, making reading and entry of amendments difficult. Substitute claims with lines one and one-half or double spaced on good quality paper

are required. See 37 CFR 1.52(b).

4. A brief description of Figure 3 was not found in the specification.

Drawings

5. New corrected drawings are required in this application because the shading used in figures 2 and 3 makes reading and understanding of the figures and their elements difficult to achieve. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

6. Claims 21 and 22 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 21 and 22 have not been further treated on the merits.

7. Claim 12 is objected to because of the following informalities: "date" (line 2) should be changed to --data--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,263,287 B1 issued to *Zheng et al* (Zheng, hereinafter) and US patent 5,980,096 issued to *Thalhammer-Reyero* (Reyero, hereinafter).**

Claims 1 and 9:

Zheng discloses a system, integrated computer software programs, and methods for manipulation and analysis of data. Zheng teaches the invention is suited for use with gene expression data generated with microarray and genechip technologies. The invention has graphical tools, search and sort functions for viewing both the original and processed gene expression data. The invention also relates to a graphical user interface for data clustering, graphical viewing, and browsing (abstract; col. 2, lines 18-42). Zheng teaches a computer system having a processor and a display device with a computer-executable program having a software module and a user interface (figs. 1-3; col. 4, lines 48-67; col. 5, lines 1-3, 32-43).

Zheng does not teach a user interface having a representation of available transformations, a sequence assembly area, and a plurality of user-selectable, user-sequenciable operations to produce modified data. However, Reyero discloses a graphical interface, method and system providing a shell environment for development and deployment for graphic information storage and retrieval, visual modeling and dynamic simulation of complex systems (chemical, biological, biochemical, cellular, physiological, pathophysiological). A graphical user interface deals with incomplete and constantly evolving information and data (abstract; col. 4, lines 60-67; col. 5, lines 1-40, 63-67; col. 6, lines 1-6, 30-41). Reyero teaches knowledge-based building blocks (bioObjects) represented by icons (representing chemical processes), (col. 6, lines 46-49; col. 7, lines 24-48). Reyero teaches menu-options associated with the icons; the user may create an instance of the class represented by the icon by dragging and dropping (col. 17, lines 1-10; col. 18, lines 40-65); the user can select, assemble icons sequentially, and apply a sequence of operations to the data to produce modified data for storage or display (col. 19, lines 1-8, 40-50; col. 20, lines 64-67; col. 21, 35-47; col. 23, lines 22-32; col. 24, lines 5-17; col. 26, lines 51-67; col. 34, lines 27-49; col. 35, lines 17-31; col. 42, lines 1-21). Therefore, it would have been obvious to one ordinarily skilled in the art at

the time the invention was made to modify Zheng's method of selecting and displaying data to include Reyero's interface and technique for assembling objects and displaying chosen operations because users who are not specialists in the computer field are enabled to easily and efficiently program or model a process (transformation) by selecting, gripping, releasing, and connecting objects.

Claims 2 and 10:

See claim 1. Zheng teaches selection of microarray data (abstract; col. 1, lines 5-9; col. 5, lines 58-60).

Claims 3, 11 and 16:

See claim 1. Zheng/Reyero teaches operations that have an associated visual representation (icon) and perform a specific operation on the data. Reyero teaches a dialog box for allowing the user to choose data preparation parameters (Reyero: col. 17, lines 1-10).

Claim 4:

See claim 2. Zheng/Reyero teaches a graphical user interface for arranging data, a data set builder (Reyero: col. 4, lines 12-50), a data source list (Reyero: col. 20, lines 28-39; col. 49, lines 37-60; col. 72, lines 46-60; col. 73, lines 1-65), and replicated (cloning) data sources (Reyero: col. 16, lines 35-39, 59-63).

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Claims 5, 12 and 13:

Zheng/Reyero teaches an interface (builder) wherein users have the option to prepare data sets (dragging and dropping objects) including single, paired, or replicated data sources (Reyero: col. 4, lines 12-50; col. 20, lines 28-39; col. 49, lines 37-60; col. 72, lines 46-60; col. 73, lines 1-65; col. 16, lines 35-39, 59-63).

Claims 6, 14 and 17:

See claim 1. Zheng/Reyero teaches choosing operations, modification of data, transforming data, combining replicate data (cloning and connecting objects), adding missing data (Reyero: col. 8, lines 32-40; col. 16, lines 35-63).

Claims 7, 8 and 18:

Zheng teaches a normalizing operation including dividing data values into groups of neighboring values and applying a specific factor for each group (col. 3, lines 25-29; col. 5, lines 27-30; col. 11, lines 5-13; col. 18, lines 20-24; col. 20, lines 54-56; figs. 4, 10, 15, 17, 19).

Claim 15:

See claim 1. Zheng teaches that numerical representations assist in allowing for the arithmetical transformation of data (col. 1, lines 62-67; col. 2, lines 1-3; col. 6, lines 48-53; col. 7, lines 1-27).

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Claim 19:

See claim 7. Zheng teaches normalized values in groups such that a particular distribution is brought to a desired shape (figs. 10, 14, 15, 17, 19; col. 14, lines 15-44).

Claim 20:

Zheng teaches overlapping so that the computation is efficient in terms of a number of operations executed for a data set. Zheng teaches a near perfect overlap of the time and transformed curves. Zheng shows an example wherein the system can provide a combined transformation of time shift and vertical flip that can transform two seemingly dissimilar curves to nearly identical ones (col. 13, lines 22-64).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

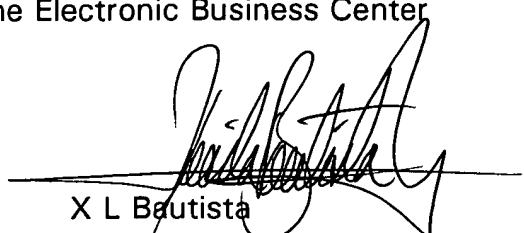
11. The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach monitoring and analysis of data; analysis and display of microarray data; and visual programming.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to X L Bautista whose telephone number is (703) 305-3921. The examiner can normally be reached on Monday-Thursday (8:00-18:00), Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W Cabeca can be reached on (703) 308-3116. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



X L Bautista
Patent Examiner
Art Unit 2173

xl
June 4, 2004